



Muscle strain: A common sports injury

By **THOMAS R. LYONS, M.D.**

A muscle strain or “pulled” muscle represents a common musculoskeletal condition and is the most common injury seen with sports participation. Muscle strains occur in people of all ages, from professional athletes to recreational athletes to individuals just trying to stay in shape. Muscle strains are defined as partial or complete tears of muscle and they usually occur near the muscle-tendon junction.

The mechanism of injury to muscle is usually a rapid eccentric muscle contraction, where the muscle lengthens as it contracts. Eccentric muscle contraction generates higher forces than con-

centric muscle contraction. Muscles that cross two joints are frequently affected by strain injuries. The hamstring group (located in back of thigh and crosses the hip and knee joints), the rectus femoris (located in front of thigh and crosses the hip and knee joints) and the gastrocnemius (located in back of leg and crosses the knee and ankle joints) are all susceptible to strain injuries.

Diagnosis of a muscle strain can be made with a careful history and physical examination. Patients often report onset of pain during intense activity. Physical examination will usually show swelling, bruising and tenderness in the area of muscle injury. With a complete

muscle rupture, a palpable defect may be present. Range of motion of adjacent joints will be painful and may be restricted. Weakness is also a common finding with muscle strains. Plain X-rays will usually appear normal. MRI scanning is not usually necessary but is sometimes used to determine the severity of muscle injury.

Treatment of muscle strains initially consists of rest, ice and compression along with non-steroidal anti-inflammatory medication. After a few days, as pain and swelling have subsided, physical therapy is initiated to regain strength and range of motion. Return to activity and sports participation is allowed only after full range of motion and near full

strength is restored. Performing proper warm-up and avoiding severe fatigue may help prevent muscle strains. An evaluation by your orthopedic surgeon is necessary to properly diagnose and treat a muscle strain injury.★

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